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Designing Learning for Evidence-Based Practice by Marjorie L. Pappas

Assessment and evidence-based practice have become hot topics today, but the bottom line for busy library media specialists is how do they effectively apply to what is happening or needs to happen in the library media center. How can information literacy lessons be designed to provide evidence that students have met the objectives of the lesson? What is backwards design? What are appropriate assessment tools, and how are these applied within a lesson? How do library media specialists select appropriate instructional methods? How do library media specialists use the evidence of student learning?

Connecting to State Standards

The No Child Left Behind Act (NCLB) has placed a significant focus on standards. "Standards establish what students need to know and be able to do to be proficient at various levels in their education" (Pappas 2007, 19). Understandably, classroom teachers are focused on effectively covering their content area standards and are often reluctant to add information literacy skills to their lessons because they see no direct connection to the state achievement tests. However, a close examination of many state standards documents shows a significant correlation between the *Information Literacy Standards* (AASL & AECT) and content area standards. Library media specialists who found those correlations in their state standards and developed information skills lessons focused on those correlations with appropriate assessment are accumulating evidence that demonstrates the effectiveness of the library media program. As an increasing number of states are replicating the Colorado Study, a growing body of evidence suggests that high quality school library media programs can increase academic achievement scores by as much as 20% (Lance 2001, 6).

Designing Learning with Backwards Design

The Designing Learning for Evidence-Based Practice matrix (See Figure 1) provides a sequence of steps or a process for designing learning with documentation or evidence of the learning outcomes.

Backwards design is a concept developed by Grant Wiggins and Jay McTighe (2005), and it includes the following elements:

- What do we want students to learn? (standards and objectives)

- How will we know if learning has occurred? (assessment tools or strategies)
- How will we facilitate the learning process? (responsibilities of library media specialist, classroom teacher and students)

Zmuda uses the concepts of backwards design to create a form that library media specialists can use to “communicate the vision and expectations for student learning in the library media center” (2006, 2).

Select Standards and Objectives

Ideally, the process would begin with identifying the appropriate state standards. Library media specialists who are collaborating with a classroom teacher in the planning process would select content standards that correlate with the Information Literacy Standards and develop relevant objectives for the lesson.

What about the library media specialist, however, who is teaching information skills with limited or no collaboration with the classroom teacher? Should evidence-based practice apply only in those situations when collaboration is possible? Zmuda suggests “when teachers bring their students in as an isolated event, library media specialists can still evaluate student performance on information and technology literacy standards with or without involvement of the classroom teacher” (2006, 22). Library media specialists in the elementary grades who now operate with fixed schedules might find this evidence useful when advocating for a change to a partially flexible schedule.

Assessment of Student Learning

Determining what students will do to demonstrate their new skills or knowledge is the next step of design process. The library media specialist and classroom teacher have a variety of assessment tools and strategies from which to choose. (See Figure)

Todd’s research findings suggest that checklists completed by both the library media specialist and the student are an important assessment strategy in evidence-based practice (2003). Checklists are both learning and assessment tools that enable students to engage in self-checking to determine if all of the requirements are completed. Todd’s research also found that “some school librarians indicated that they used rubric strategies where students’ performance in final products were scaled according to a set of criteria that clearly defined what range of acceptable to unacceptable performances and/or information products look like” (12).

Pappas states, “Organizers are visual representations of content that show the inter-relationships of specific relevant information” (2007, 22). Organizers, including webs, matrices, and KWL charts enable students to visually

demonstrate thinking skills, e.g., comprehension, analysis, synthesis, and evaluation.

Harada suggests the log is a valuable tool for self-assessment and reflection that enables students to monitor their own learning (2006, 35). However, the construction of writing prompts is critical to using logs or journals as assessment strategies. The writing prompts should closely correlate with the objectives of the lesson. For example, a lesson that focuses on evaluating websites might include the following writing prompts for student logs:

- Which three web resources were the most valuable for this research project?
- What are some examples of quality features that represent the evaluation criteria on those three websites?

The selection of assessment tools for a specific lesson must reflect the learner outcome(s) included in the objective(s). For example, the lesson objective requires students to use the catalog to find books in the library. The organizer might be a matrix that includes several topics with a space to write the author, title, and call number of several books about those topics. Or, if students are required to gather information about the life of a prominent colonial American, one assessment tool might be a timeline of significant events in that person's life.

Organizers and matrices are typically constructed of different shapes and, thus, are limited only by the creativity of the library media specialist or classroom teacher.

Performance tasks and products are often used as assessments. The product or task alone, however, does not provide sufficient evidence of learning. A rubric, checklist, or rating scale should be used to assess both the quality of the product or performance and the content.

Selection of Instructional Methods

The next step in the design process is determining the appropriate instructional method(s) or the responsibilities of the classroom teacher, library media specialist, and student. (See Figure 1)

Direct instruction is typically some form of lecture ranging from an audio approach to a multimedia presentation. There are also situations when direct instruction is the most efficient method for delivering information to students. However, this is one-way communication and unless the speaker is incredibly dynamic, students frequently tune out after a short period of time.

Indirect or individualized instruction typically causes the learner to become more mentally engaged. A short lecture followed by a demonstration or modeling and then some form of guided practice are much more likely to produce a longer rate of retention.

Inquiry, problem solving, or cooperative learning approaches cause students to take some responsibility for gathering information and applying that information to the construction of a product or performance task. The challenge with these methods is that students – often working in small groups – are usually engaged in slightly different learning experiences, each of which require facilitating or coaching by the library media specialist or classroom teacher. Scaffolding strategies, therefore, become very important with these instructional methods. Scaffolding can include pathfinders (to help students gather information), carefully written instructions that include information about incremental tasks and the requirements of the end product or performance. Checklists that detail steps in the process and requirements of the task are useful to guide students and to assess both the process and end product. Daily logs or journals that include writing prompts can engage students in thinking about new understandings while providing information about the process they followed throughout the learning activity.

Marzano's research on instructional strategies that work would be a useful resource for library media specialists (2001). The list of strategies includes the following:

- Summarizing and Note Taking
- Homework and Practice
- Nonlinguistic Representations
- Cooperative Learning
- Setting Objectives and Providing Feedback
- Cues, Questions, and Advance Organizers (Table of Contents, iii)

This is an intriguing list because these strategies are often applied in lessons developed by library media specialists. For example, summarizing and note taking are both part of information literacy skills.

Marzano suggests that nonlinguistic representations include mental models, graphic organizers, descriptive patterns, physical models, drawn pictures and pictographs, and engagement in kinesthetic activity (74-83). These strategies relate to visual literacy which is important today as our world grows increasingly more visual.

The category, Cues and Questions, relates to engaging students in questioning and higher level thinking. Questioning and critical thinking are inherent in inquiry learning and information literacy skills.

Marzano's discussion about advance organizers reflects David Ausubel's theories related to strategies enabling students to make connections with their prior knowledge. Library media specialists typically use brainstorming webs and KWL charts for this purpose.

Evidence of Student Learning

When the lesson is completed, the next step is to gather the assessment tools to compile and analyze the data. Harada suggests that spreadsheets are useful for recording data. Reflections on each lesson and the compiled data by classroom teachers and library media specialists also provide useful anecdotal information. Quotations from students' reflections might also be included in evidence folders. Evidence folders could include examples of lessons, student work, sample logs, and examples of assessment tools. (Harada 2006)

The next step is to make a list of those students whose assessments suggest they were not successful in fulfilling the objectives of the lesson. A lesson can be planned to reteach those skills with a follow-up activity for that group of students.

Recording Your Evidence

Data collected using student assessments, reflections, notes from student conferences, and reflections from library media specialists and classroom teachers is not the same as quantitative test data. Information in evidence folders is qualitative, i.e., descriptive. However, over a period of time, this qualitative data can be very informative.

Library media specialists will need a framework for tracking this data for a longitudinal picture of patterns and trends. Many school districts have developed an information skills curriculum. When a district curriculum exists, a spread sheet can be created that includes the list of skills by grade level as a list in the first column. Column labels might be Proficient (3 points), Satisfactory (2 points) and Novice (1 point). This spreadsheet can be replicated for the appropriate number of grades and classes. After each new skill lesson, the assessment results can be aggregated by those three rating scales and the scores recorded on the spreadsheet. Columns for percentages would provide additional information.

One interesting variable to track would be the level of collaboration associated with each lesson. Zmuda and Levitov have proposed the "Assessment Tool: Levels of Communication, Cooperation, and Collaboraton with Teachers" that can help library media specialists with this sort of tracking (2006).

Koechlin and Zwaan also have included a chapter in their recent book, *Build Your Own Information Literate School*, which provides examples of forms for recording the results of information skills evidence (2005). One section includes lists of documents from students, classroom teachers, and library media specialists that could be collected as evidence.

Using and Communicating Evidence

lessons can be evaluated based on the results of the evidence. Assessment data and reflections from students will be very useful for revising each lesson. A form should be created that can be used by the library media specialist and the classroom teachers to evaluate each lesson. A section might be included for evaluating the library media center's resources used for the lesson. The form should be short and easy to complete to accommodate the busy schedules of classroom teachers.

Periodically, information from evidence folders and spreadsheet records can be included in newsletters to both parents and faculty. Individual class data can be shared with each classroom teacher. It is important to communicate this information with teachers and principals so that they will develop an understanding of the value of the library media curriculum as it intersects with the school content area curricula. Once evidence is acquired, Library media specialists should communicate, communicate, communicate!

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Organizer Resources

Graphic Organizers Activity Bank. SCORE.
<http://www.sdcoe.k12.ca.us/score/actbank/torganiz.htm>

Graphic Organizers in the Classroom. Developed by Annette Lamb and Larry Johnson. Teacher Tap.
<http://eduscapes.com/tap/topic73.htm>

The Virtual Institute: Concept Mapping and Inspiration. New Jersey Department of Education's Technology Fellowship Institute.
<http://www.etc.net/techfellow/inspir.htm>

Tools for Reading, Writing and Thinking. Greece Central School District.
<http://www.greece.k12.ny.us/instruction/ela/6-12/Tools/Index.htm>

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